

CLAIMS:

1. Ophthalmic apparatus for the testing of eye deviation of a patient's eyes, said apparatus comprising:

- a) a variable lens having refractive characteristics which cause alterations in direction of rays of light passing through the lens along predetermined incident paths;
- 5 b) means for controlling the refractive characteristics of said variable lens, during the measurement of a patient's eye deviation; and
- c) means for outputting a data value indicative of a measured eye deviation for the patient.

10 2. Apparatus according to claim 1, wherein the variable lens comprises a meniscus separating a layer of a first fluid and a layer of a different, second fluid.

15 3. Apparatus according to claim 1 or 2 wherein the variable lens comprises electrodes and the refractive characteristics of the variable lens are variable by variation of voltages applied across the electrodes.

4. Apparatus according to claim 3, wherein the variable lens includes a substantially cylindrical electrode configuration.

20 5. Apparatus according to claim 3 or 4, wherein the variable lens defines an optical axis and said electrodes include a configuration of a plurality of electrodes spaced about said optical axis.

25 6. Apparatus according to claim 5, wherein said configuration of electrodes comprise one or more pairs of electrodes, and the members of each said pair are located on opposite sides of said optical axis.

7. Apparatus according to claim 5 or 6, comprising means for rotating the variable lens about the optical axis.

8. Apparatus according to claim 5 or 6, wherein said control means is adapted to rotate a pattern of applied electrode voltages about the optical axis.

5 9. Apparatus according to any preceding claim, wherein said output means is arranged to output a data value to be included in at least part of an ophthalmic prescription to be produced for the patient.

10 10. Apparatus according to any preceding claim, further comprising a testing object comprising ophthalmic indicia for viewing by a patient during the testing of eye deviation.

15 11. Apparatus according to any preceding claim, wherein said control means is adapted to achieve at least approximately spherical lens shapes of variable refractive characteristics.

20 12. Apparatus according to any preceding claim, wherein said control means is adapted to achieve at least approximately cylindrical, or at least approximately spherocylindrical lens shapes, of variable refractive characteristics.

13. Apparatus according to any preceding claim, wherein said control means is adapted to provide, in one refractive state, a focal power of a negative value.

25 14. Apparatus according to any preceding claim, wherein said control means is adapted to provide, in one refractive state, a focal power of a positive value.

15. Apparatus according to any preceding claim, further comprising head mounting means for positioning the variable lens in a desired configuration relative to the patient's eyes.

30 16. Apparatus according to any preceding claim, further comprising one or more non-variable solid lenses which are positionable so as to share the optical axis of said variable lens.

17. A method of testing the eye deviation of a patient's eyes, said method comprising:

5 a) providing a variable lens having refractive characteristics which cause alterations in direction of rays of light passing through the lens along predetermined incident paths;

b) controlling the refractive characteristics of the variable lens during the measurement of a patient's eye deviation; and

10 c) outputting a data value indicative of a measured eye deviation for the patient.

18. A method according to claim 17, wherein during the measurement the patient views a testing object comprising ophthalmic indicia through the variable lens.

19. A method according to claim 17 or 18, wherein the data value indicative of a 15 measured eye deviation for the patient is recorded when the patient can view the ophthalmic indicia at a level of ability at least matching a predetermined threshold of viewing ability.

20. A method according to any of claims 17 to 19, comprising generating 20 ophthalmic prescription data including details of the patient's eye deviation as indicated by said output data value.